



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Public Health Reports

Treasury Department, United States Marine-Hospital Service. Published in accordance with act of Congress approved February 15, 1893.

VOL. XIV.

WASHINGTON, D. C., MARCH 17, 1899.

No. 11.

UNITED STATES.

[Reports to the Supervising Surgeon-General, United States Marine-Hospital Service.]

Investigation into the cause of yellow fever.

[Continued from PUBLIC HEALTH REPORTS, Vol. XIII, No. 45, 1898.]

HAVANA, CUBA, *March 3, 1899.*

SIR: I have the honor to state that the laboratory work has progressed satisfactorily here during the month of February. Three cases of fever, of a suspicious nature, have been seen, all of them in the medical service of the army of occupation. In one case, that of private "Smith," of the Eighth Infantry, there was much diversity of opinion as to diagnosis, our own being in favor of yellow fever prior to and after death. For, in addition to the clinical facts presented, I was able to isolate from the living blood the bacillus icteroides of Sanarelli, thus allowing for the first time the presence of this organism to act as corroborative evidence of the disease. In no case brought to necropsy heretofore have we been able to first isolate this organism from the blood, and at subsequent examination to isolate it from the organs. In this case the organism was isolated in pure culture from the spleen. Of the two other cases, I saw one at Guanajay in private "Perkins," of the Two-hundred-and-second New York Volunteers. From an imperfect history and the status presented I differed from the diagnosis of yellow fever, and from blood taken and carefully cultivated I could only obtain a species of proteus. In the third case there was difference of eminent local opinion, but blood taken on the fourth day gave no evidence of the Sanarelli organism. A few comparative necropsies have been done, and it is intended to continue these during the greater prevalence of the yellow fever. The isolation of the toxins and experimentation with them has progressed favorably under Passed Assistant Surgeon H. D. Geddings. He has determined that the toxin of the bacillus icteroides is most potent, the degree of toxicity or value being but little less than

that of the pest organism. We are now testing the value of the anti-amaryllic serum in the case of animals inoculated with the organism isolated here, comparing them with others inoculated with bacillus icteroides. We can but regret the impossibility of obtaining cases in greater number, yet the outlook is promising.

Yours, respectfully,

EUGENE WASDIN,
Surgeon, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

HAVANA, CUBA, *March 3, 1899.*

SIR: I have the honor to request that you will allow us to state that, in regard to the production of gas through the fermentation of sugars in bouillon, the conclusion advanced by us in our preliminary report is at fault, in that we state that the bacillus of Sanarelli does not ferment glucose with the production of gas.

That conclusion was based upon observations actually made, the action of bacillus icteroides being noted in comparison with each organism isolated. Upon our return to this city the observation was found to have been at fault, since all examples of bacillus Sanarelli now give the production of gas with glucose. Most earnest effort was made to discover the source of this error of observation, in order to correct it, and to ascertain its influence upon the other statements of our preliminary report. It suffices now to say that the fault of observation was based upon a fault of technique in the manufacture of our sugar media. This arose from the habitual use of the "Kny-Scherer" steam sterilizer, the lowest temperature in which is much too high for use in sterilizing these media. Recent experiment has demonstrated that the exposure of these sugar bouillons to the temperature of the "Arnold" sterilizer but for a short time is sufficient to cause a molecular change in the sugar, and that the usual method of sterilizing on three successive days, if done in the "Kny" cylinder, even carefully, will result in serious change in the media. Glucose under these circumstances shows less gas production, with the appropriate organism, until finally this ceases. Lactose is first inverted, the organism producing now as much gas as in a glucose medium, but further heating changes it so that the production of gas ceases, although the organism still grows freely therein. These facts depend upon the change of a part of the sugar into caramel, for in bouillon to which a saturated solution of caramel has been added in sufficient quantity, about 35 per cent, and in which Fehlings' solution shows considerable free sugar, the bacillus icteroides grows abundantly, but does not ferment the unchanged sugar. Upon the establishment of our laboratory here, the lack of a good gas supply caused us to use the high-pressure sterilizer entirely, and it was more than easy to allow overheating, and since this was done with this medium in thin Smith's tubes, the change in color of the medium was not appreciated. In justice to Professor Sanarelli and other observers, and to place our report on a correct basis, we think this correction should be made at once, and not await our final report.

I have revised the work involved in the preliminary statement, and find that it is not in question otherwise.

Most respectfully,

EUGENE WASDIN,
Surgeon, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.